

more than 10 degrees caused by the operation of electrical equipment, the placard must state which electrical loads, or combination of loads, would cause a deviation of more than 10 degrees when turned on.

[Doc. No. 4080, 29 FR 17955, Dec. 18, 1964; 30 FR 258, Jan. 9, 1965, as amended by Amdt. 23-20, 42 FR 36969, July 18, 1977]

**§ 23.1549 Powerplant and auxiliary power unit instruments.**

For each required powerplant and auxiliary power unit instrument, as appropriate to the type of instruments—

- (a) Each maximum and, if applicable, minimum safe operating limit must be marked with a red radial or a red line;
- (b) Each normal operating range must be marked with a green arc or green line, not extending beyond the maximum and minimum safe limits;
- (c) Each takeoff and precautionary range must be marked with a yellow arc or a yellow line; and
- (d) Each engine, auxiliary power unit, or propeller range that is restricted because of excessive vibration stresses must be marked with red arcs or red lines.

[Amdt. 23-12, 41 FR 55466, Dec. 20, 1976, as amended by Amdt. 23-28, 47 FR 13315, Mar. 29, 1982; Amdt. 23-45, 58 FR 42166, Aug. 6, 1993]

**§ 23.1551 Oil quantity indicator.**

Each oil quantity indicator must be marked in sufficient increments to indicate readily and accurately the quantity of oil.

**§ 23.1553 Fuel quantity indicator.**

A red radial line must be marked on each indicator at the calibrated zero reading, as specified in § 23.1337(b)(1).

[Doc. No. 27807, 61 FR 5193, Feb. 9, 1996]

**§ 23.1555 Control markings.**

- (a) Each cockpit control, other than primary flight controls and simple push button type starter switches, must be plainly marked as to its function and method of operation.
- (b) Each secondary control must be suitably marked.
- (c) For powerplant fuel controls—
  - (1) Each fuel tank selector control must be marked to indicate the posi-

tion corresponding to each tank and to each existing cross feed position;

(2) If safe operation requires the use of any tanks in a specific sequence, that sequence must be marked on or near the selector for those tanks;

(3) The conditions under which the full amount of usable fuel in any restricted usage fuel tank can safely be used must be stated on a placard adjacent to the selector valve for that tank; and

(4) Each valve control for any engine of a multiengine airplane must be marked to indicate the position corresponding to each engine controlled.

(d) Usable fuel capacity must be marked as follows:

(1) For fuel systems having no selector controls, the usable fuel capacity of the system must be indicated at the fuel quantity indicator.

(2) For fuel systems having selector controls, the usable fuel capacity available at each selector control position must be indicated near the selector control.

(e) For accessory, auxiliary, and emergency controls—

(1) If retractable landing gear is used, the indicator required by § 23.729 must be marked so that the pilot can, at any time, ascertain that the wheels are secured in the extreme positions; and

(2) Each emergency control must be red and must be marked as to method of operation. No control other than an emergency control, or a control that serves an emergency function in addition to its other functions, shall be this color.

[Doc. No. 4080, 29 FR 17955, Dec. 18, 1964; 30 FR 258, Jan. 9, 1965, as amended by Amdt. 23-21, 43 FR 2319, Jan. 16, 1978; Amdt. 23-50, 61 FR 5193, Feb. 9, 1996]

**§ 23.1557 Miscellaneous markings and placards.**

(a) *Baggage and cargo compartments, and ballast location.* Each baggage and cargo compartment, and each ballast location, must have a placard stating any limitations on contents, including weight, that are necessary under the loading requirements.

(b) *Seats.* If the maximum allowable weight to be carried in a seat is less than 170 pounds, a placard stating the

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lesser weight must be permanently attached to the seat structure.

(c) *Fuel, oil, and coolant filler openings.* The following apply:

(1) Fuel filter openings must be marked at or near the filler cover with—

(i) For reciprocating engine-powered airplanes—

(A) The word “Avgas”; and

(B) The minimum fuel grade.

(ii) For turbine engine-powered airplanes—

(A) The words “Jet Fuel”; and

(B) The permissible fuel designations, or references to the Airplane Flight Manual (AFM) for permissible fuel designations.

(iii) For pressure fueling systems, the maximum permissible fueling supply pressure and the maximum permissible defueling pressure.

(2) Oil filler openings must be marked at or near the filler cover with the word “Oil” and the permissible oil designations, or references to the Airplane Flight Manual (AFM) for permissible oil designations.

(3) Coolant filler openings must be marked at or near the filler cover with the word “Coolant”.

(d) *Emergency exit placards.* Each placard and operating control for each emergency exit must be red. A placard must be near each emergency exit control and must clearly indicate the location of that exit and its method of operation.

(e) The system voltage of each direct current installation must be clearly marked adjacent to its external power connection.

[Doc. No. 4080, 29 FR 17955, Dec. 18, 1964; as amended by Amdt. 23-21, 42 FR 15042, Mar. 17, 1977; Amdt. 23-23, 43 FR 50594, Oct. 30, 1978; Amdt. 23-45, 58 FR 42166, Aug. 6, 1993]

### § 23.1559 Operating limitations placard.

(a) There must be a placard in clear view of the pilot stating—

(1) That the airplane must be operated in accordance with the Airplane Flight Manual; and

(2) The certification category of the airplane to which the placards apply.

(b) For airplanes certificated in more than one category, there must be a placard in clear view of the pilot stat-

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ing that other limitations are contained in the Airplane Flight Manual.

(c) There must be a placard in clear view of the pilot that specifies the kind of operations to which the operation of the airplane is limited or from which it is prohibited under § 23.1525.

[Doc. No. 27807, 61 FR 5193, Feb. 9, 1996]

### § 23.1561 Safety equipment.

(a) Safety equipment must be plainly marked as to method of operation.

(b) Stowage provisions for required safety equipment must be marked for the benefit of occupants.

### § 23.1563 Airspeed placards.

There must be an airspeed placard in clear view of the pilot and as close as practicable to the airspeed indicator. This placard must list—

(a) The operating maneuvering speed,  $V_O$ ; and

(b) The maximum landing gear operating speed  $V_{LO}$ .

(c) For reciprocating multiengine-powered airplanes of more than 6,000 pounds maximum weight, and turbine engine-powered airplanes, the maximum value of the minimum control speed,  $V_{MC}$  (one-engine-inoperative) determined under § 23.149(b).

[Amdt. 23-7, 34 FR 13097, Aug. 13, 1969, as amended by Amdt. 23-45, 58 FR 42166, Aug. 6, 1993; Amdt. 23-50, 61 FR 5193, Feb. 9, 1996]

### § 23.1567 Flight maneuver placard.

(a) For normal category airplanes, there must be a placard in front of and in clear view of the pilot stating: “No acrobatic maneuvers, including spins, approved.”

(b) For utility category airplanes, there must be—

(1) A placard in clear view of the pilot stating: “Acrobatic maneuvers are limited to the following \_\_\_\_\_;” (list approved maneuvers and the recommended entry speed for each); and

(2) For those airplanes that do not meet the spin requirements for acrobatic category airplanes, an additional placard in clear view of the pilot stating: “Spins Prohibited.”

(c) For acrobatic category airplanes, there must be a placard in clear view of the pilot listing the approved acrobatic